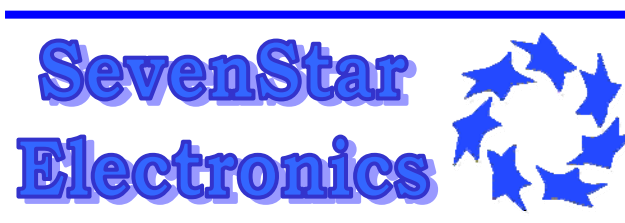


# SEVENSTAR ELECTRONICS LIMITED



## FUNCTIONAL TEST STATEMENT FOR



### *SeaTraceR* (S.287) AIS Class B 'CS' Transponder









## Purpose

This statement is provided in support of our submission for FCC approval for the SeaTraceR S.287 AIS Transponder.

## Statement

The SeaTraceR unit is based on the SRT-MTB-PCA circuit board assembly from Software Radio Technology of Midsomer Norton, UK, and evidence of compliance to the detailed performance specifications is based on SRT's previous submissions. Access to these submissions is granted through the letter from SRT in the appendices. A different enclosure has been used in this product so we have repeated the EMC, vibration, shock and safety tests in detail, and suitable reports are included in our submission.

## Applicable Specifications and Standards

-  IEC 62287-1, Technical Requirements for Class B AIS Transponders.  
Part 1: CSTDMA techniques
-  IEC 60945 (1996), EN 60945 (1997): General Requirements for Maritime Equipment – Methods of Testing & Required Test Results.
-  IEC 61108-1, Maritime navigation and radiocommunication equipment and systems – Global navigation satellite systems (GNSS) – Part 1: Global positioning system (GPS) – Receiver equipment – Performance standards, methods of testing and required test results
-  ITU-RM.1371-1, Technical characteristics for a universal shipborne automatic identification system using time division multiple access in the VHF maritime mobile band
-  IEC 61162-1, Digital interfaces for Marine Equipment
-  ITU R M.493-9/11, DSC system for the maritime mobile service
-  ITU R M.825-2/3, DSC techniques for VTS, ship-to-ship
-  IEC 60950-1, standard for IT equipment, Safety, Part 1 – General requirements (used because the equipment is intended to be connected to a PC as part of its function).

## Compliance

Our evidence of compliance with the specifications is based on:

1. Design & Construction – the *SeaTraceR* S.287 is built around the previously-submitted SRT-MTB-PCA circuit board assembly from SRT. A high-quality IP-65 rated enclosure has been used in this instance to provide a professional, robust, water proof unit suitable for use in both the leisure and commercial marine environments (see para. 3)
2. Functional Performance - the PCB assembly SRT-MTB-PCA forms the heart of the unit, and is responsible for all the electrical functionality of the unit. This PCB assembly is procured under a license agreement from Software Radio Technology of the UK, and has already been granted a EU Type Approval certificate by BABT – reference NC/12921, from BSH (Germany) and the USCG. A letter from SRT is attached in the Appendices allowing use of their previous test results, Technical Construction File, waivers and other data in support of this unit's compliance to the specifications.
3. Environmental performance - the mechanical assembly and external connections of the SevenStar unit are slightly different to those previously submitted on the SRT unit, so the EMC tests, vibration and shock tests, and safety tests have been repeated specifically for this unit. Test reports for these are included in the 'Test Reports' section. We have designed a high-quality professional enclosure, rated to IP-65 standard, which is equally well suited to professional & commercial applications as well as leisure use.
4. Quality Environment - SevenStar operates a Quality System consistent with the requirements of BS EN ISO9001:2000, and is inspected annually. A copy of the Registration Certificate is included in the appendices. SevenStar's processes and premises are also approved and inspected annually to the Marine Equipment Directive schedules B and D by Bureau Veritas with respect to its GMDSS marine products.

## Appendix 1 – SRT Authorisation



Software  
Radio Technology

Software Radio Technology plc  
Wireless House  
Westfield Industrial Estate  
Midsomer Norton  
Bath BA3 4BS  
England UK

Tel: +44 (0)1761 409 500  
Fax: +44 (0)1761 410 093  
email: [info@softwarerad.com](mailto:info@softwarerad.com)  
[www.softwarerad.com](http://www.softwarerad.com)

25<sup>th</sup> October 2006

**Re: SevenStar Electronics Ltd. license to use Software Radio Technology plc. AIS technology.**

To whom it may concern,

We, Software Radio Technology plc of Wireless House, Westfield Industrial Estate, Midsomer Norton, Bath, BA3 4BS confirm that SevenStar Electronics Ltd. of 7 Richards Close, Wootton Bassett, Wiltshire, SN4 7LE, UK are licensed to utilise the SRT-MTB Class B AIS technology identical in form and function to that tested and approved by BABT and BSH.

Yours sincerely,

Neil Peniket BEng, CEng, MIET  
Director – SRT Marine

Registered office as above  
Registered in England number 5459678  
Software Radio Technology Trading Ltd  
Registered office as above  
Registered in England number 2205771



Software Radio Technology (Marine Technology) Ltd  
Registered office as above  
Registered in England number 4317661

VAT registration number 869556264

## Appendix 2 – Waivers

Because the SeaTraceR unit is functionally identical to the SRT-MTB-OEM unit from SRT, SevenStar Electronics Ltd wish to apply for the same waivers for certain power supply and environmental tests as allowed by IEC 62287-1 para 9.1 Table 21. For details please refer to SRT document "SRT-MTB-OEM: Application for Waivers", as submitted as part of NC/12921.

Exceptions:

-  The SeaTraceR is defined as category (b), protected from the weather, whereas the SRT unit is defined as category (c), exposed.
-  The unit assembly drawing in the SRT Waiver Application document is not relevant – please see the appropriate drawings in the SevenStar submission.

## Appendix 3 – BS EN ISO9001:2000 Approval

# Certificate of Registration

*This document certifies that the quality administration systems of*

**SEVENSTAR ELECTRONICS LTD**

*have been assessed and approved by  
CQS Certified Quality Systems Limited  
to the following Quality administration  
systems, standards and guidelines:*

**BS EN ISO 9001 : 2000**

*The approved quality administration systems  
apply to the following:*

**SALE AND MANUFACTURE  
OF ELECTRONIC  
EQUIPMENT**

Certificate issued	20th February 2003
Certificate expiry	19th February 2013
Certificate number	GB2000470

**On behalf of CQS Certified Quality Systems**



*This Certificate remains valid while the holder maintains their quality administration systems in accordance with the standards and guidelines above, which will be audited by CQS Certified Quality Systems Limited.  
This Certificate remains the property of CQS Certified Quality Systems Limited and must be returned in the event of cancellation.*